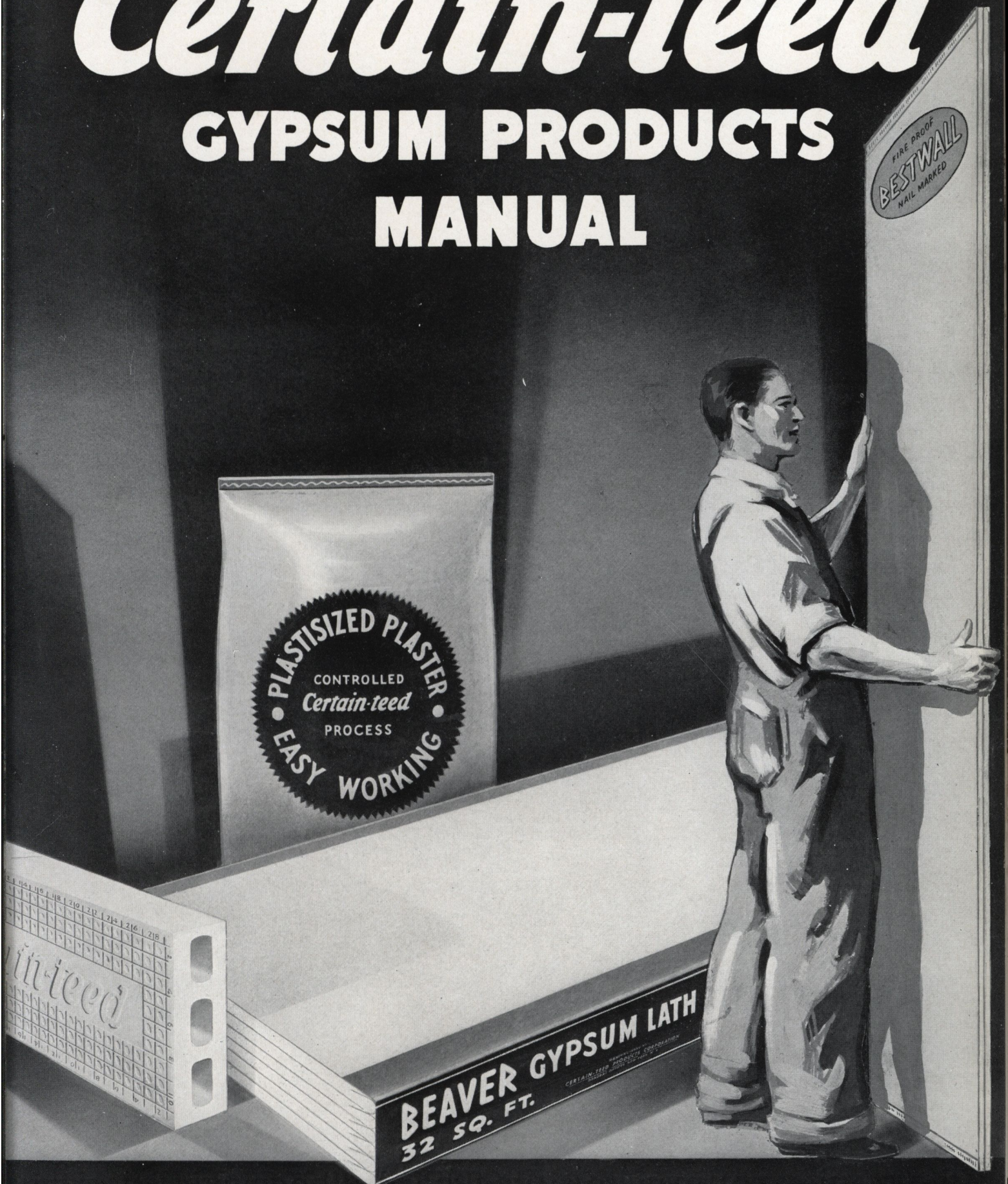


Certain-teed

GYPSUM PRODUCTS

MANUAL



CERTAIN-TEED PRODUCTS CORPORATION, General Offices, New York, N. Y.

GYPSUM PRODUCTS MANUAL

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SALES OFFICES

ATLANTA
1111 Rhodes Haverly Bldg.

BALTIMORE
1310 Lexington Bldg.

CHICAGO
105 W. Adams Street

CLEVELAND
45 Prospect Avenue, N. W.

KANSAS CITY
12th and Crystal Streets

LOS ANGELES
1228 Produce Street

NEW YORK
100 East 42nd Street

EAST ST. LOUIS
17th Street and Broadway

SAN FRANCISCO
315 Montgomery Street

SEATTLE
1904 Third Avenue

GYPSUM PRODUCTS

“PLASTISIZED” PLASTER
Fibred, Extra-Fibred, Unfibred, Sanded
Bond Plaster (For Use Over Concrete)
MOLDING—GAUGING—KEENE’S
GYPSUM PREPARED FINISHES
 Gray or White Sand Float Finish
 Gray or White Prepared Trowel Finish
PATCHING PLASTER
GYPSUM PARTITION TILE—CERTAIN-TEED
SOUND-ABSORBING PLASTER—KALITE
Kalite “H”—Kalite Hydraulic—Kalite Cast
GYPSUM WALL BOARD—BESTWALL
BESTWALL GRAIN BOARD
 (Knotty Pine, Walnut)
METALLIZED BESTWALL GYPSUM BOARD
 (Reflective Insulation)
INSULATING GYPSUM WALL BOARD
 (Reflective Insulation)
GYPSUM LATH
 Plain—Perforated
INSULATING GYPSUM LATH
 (Reflective Insulation)
GYPSUM LINER BOARD
GYPSUM SHEATHING
DRY FILL INSULATION
BESTWALL JOINT SYSTEM
HYDRATED FINISHING LIME
MASONS’ HYDRATED LIME

PLANTS

Acme, Texas
Akron, N. Y.
Blue Rapids, Kansas
Fort Dodge, Iowa
Grand Rapids, Mich.
Gypsum, Ohio

WAREHOUSES

Charlestown, Mass.
Detroit, Mich.
Los Angeles, Cal.
Philadelphia, Pa.
Port Newark, N. J.
Richmond, Cal.

"PLASTISIZED" PLASTERS—BASE COATS

ACME

BEAVER

Agatite

Certain-teed



"Plastisized" Plaster is an improved type of plaster made by Certain-teed under the brand names Acme, Agatite, Beaver, and Certain-teed. The exclusive Certain-teed controlled process of manufacturing "Plastisized" Plaster assures highly satisfactory walls when used according to directions.

"Plastisized" Plaster is available fibered for use as a first or scratch coat on wood or metal lath or for scratch and brown coats on all other types of plaster bases except concrete; also extra fibered for scratch coat on metal lath, and unfibered for scratch coat on gypsum lath, gypsum tile, and masonry, or for brown coats on all types of plaster bases except concrete.

Wood fibered plaster is available for use without sand or with one part of sand by weight. It mixes readily and produces exceptionally strong, hard walls having superior fire-resisting properties. It is used for scratch and brown coats on all types of plaster bases except concrete, and also for patching and repair work.

Sanded "Plastisized" Plaster is mixed with sand at the mill. It is supplied in fibered, unfibered, and wood-fibered types to be used for the same purposes as cement plaster for first or scratch coat and second or brown coat on all types of plaster bases except concrete.

Bond plaster mixes and spreads easily, and produces a hard, strong, fire-resisting, protective coat for use as scratch and brown coat on concrete surfaces.

COVERING CAPACITIES

Approximate Square Yardage Obtained With One Ton of Various Types of Plaster

Type of Plaster	Lath Gypsum	Metal Lath	Wood Lath	Gypsum Tile	Clay Tile or Brick
Neat*	225 to 240 Sanded 2 to 1	105 to 135 Sanded 2 to 1	180 to 210 Sanded 2 to 1	235 to 255 Sanded 3 to 1	165 to 200 Sanded 3 to 1
Wood Fibered	115 to 120 Mixed with water only. No sand.	55 to 65 Mixed with water only. No sand.	90 to 100 Mixed with water only. No sand.	182 to 210 Sanded 1 to 1	150 to 170 Sanded 1 to 1
Ready Sanded	75 to 80 Mixed with water only. No sand.	35 to 45 Mixed with water only. No sand.	60 to 70 Mixed with water only. No sand.	65 to 70 Mixed with water only. No sand.	45 to 55 Mixed with water only. No sand.
Prepared Trowel Finish	350 to 400 square yards per ton.				
Sand Float Finish	250 to 275 square yards per ton.				
Gauging Plaster	Will cover approximately 1600 square yards when proportioned: 2 tons hydrated lime to 1 ton of gauging plaster.				
Keene's Cement	As hard finish—400 lbs. Keene's Cement mixed with 100 lbs. lime putty will cover approximately 100 square yards.				

*Neat plaster is either fibered, extra fibered, or unfibered plaster to which sand must be added on the job.

Certain-teed

GYPSUM PRODUCTS MANUAL

GAUGING—MOLDING—CASTING PLASTERS

Plasterers in most sections of the country are accustomed to use a slow set gauging plaster which is properly retarded at the mill for use with lime putty for a gypsum-lime putty trowel finish. In some sections of the country a quick set gauging plaster is used with lime putty, in which case it is usually necessary to add retarder to obtain the desired setting time. Small amounts of commercial retarder as supplied by the dealer, or small amounts of either unfibred plaster or screened fibred plaster are ordinarily used.



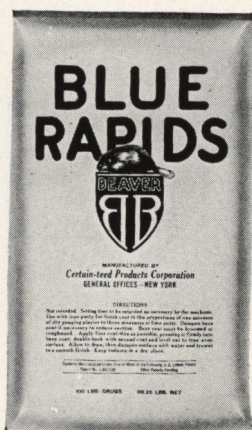
Satin Spar and Acme Gauging—Slow Set—

Manufactured from the highest grade white western gypsum rock. Special grinding and processing

provide easy working and mixing properties. When properly mixed with a high grade finishing lime, they assure a glossy, smooth, pure-white, flawless surface of uniformly excellent, satin-like texture. Retarder is added at the mill to provide the proper setting time for use with lime putty.

Blue Rapids Gauging Plaster—Quick Set— Similar to Satin Spar Finish in all respects except that it contains no retarder and is, therefore, quicker setting. Usually requires the addition of a small amount of retarder on the job. For spreading capacity see coverage table on page 3.

Directions for Use—(a) Mixing— Use either hydrated lime putty or thoroughly slaked quick-lime putty in the proportions of one measure of dry gauging plaster to three measures of lime putty. This is approximately equivalent to one part of dry gauging plaster to two parts of dry hydrated lime by weight. Make a ring of thoroughly hydrated lime putty on the mixing board, adding clean water in the center. Add the gauging plaster to the water. Allow to soak for a few minutes. Then mix to a creamy consistency and cut the lime putty thoroughly into the mixture, making a paste of uniform consistency.



(b) Applying—

See Basic Specifications for Lathing and

Plastering on pages 9 and 10.

Note: To soak hydrated lime fill water-tight box about two-thirds full of clean water. Sift lime gradually through a coarse screen, allowing it to settle under its own weight until the water is dried up and the lime fully soaked. Then supply enough excess water to furnish one to two inches of water over the lime. Soak over night in order to provide the required plasticity.

Sunflower Molding and Casting Plaster—Made from 99.0% pure gypsum rock eminently suited for the purpose, ground exceedingly fine and specially processed to make strong, hard, pure-white molds free from voids and pin holes. Under ordinary job conditions will set in from 15 to 25 minutes. Because of its superior quality and general dependability it is preferred by architects, contractors, and mechanics. It is cool working and especially suited for casting in gelatin molds. When mixed to plastering consistency the resulting dry casts will have a tensile strength of more than 500 lbs. per square inch and a compressive strength of more than 2,500 lbs. per square inch.

Used for ornamental work in hundreds of theatres, hotels, and palatial homes throughout the country. It is used for marble setting, statuary, and ornamental novelties—wherever a quick-setting, pure-white dense plaster is desired.

Certain-teed Statuary Casting Plaster contains a special case hardening material, giving a harder surface that resists abrasion and eliminates the need for a sizing coat when the casting is to be ornamented or painted.



Keene's Cement is a pure-white gypsum plaster which has been subjected to high temperature during calcination to give a plaster of great strength and hardness. It can be stored for years without deterioration.

The regular grade is used for general plastering purposes and for the manufacture of caenstone and Travertine finishes, scagliola work, castings, and run moldings.

The fast finish grade is used with lime putty as a gauging plaster for smooth, white finish. Specify *Best Bros. Regular* or *Best Bros. Fast Finish*.

For *Hydrated Finishing Lime* and *Hydrated Mason's Lime* specify Certain-teed brands.

The map below shows the location of our famous Blue Rapids, Kansas, White Gypsum Deposit. Blue Rapids, Kansas and Acme, Texas, are the points where our High Purity White Molding and Gauging Plasters are made. For locations of other Certain-teed Gypsum Plants, See Page 2 of this Section of Sweet's.



GYPSUM LATHS—INSULATING LATHS

Plaster Bases

Certain-teed manufactures a full line of plain and insulating plaster bases. These include Beaver Perforated Gypsum Lath, Beaver Gypsum Lath (plain), Beaver Insulating Gypsum Lath (Reflective Insulation), and Certain-teed Insulating Key Lap Lath (Cane Fibre), in addition to Certain-teed Gypsum Partition Tile.

Beaver Perforated Gypsum Lath

Perforated Gypsum Lath offers effective fire protection, having qualified for a one-hour fire rating with a considerable margin of safety. This lath holds the plaster with a double bond—a natural intermingling of the crystalline surface of the plaster with the fibre surface of the lath, and by mechanical keys as shown in the illustration at the left.

This double bond makes interior walls and ceilings not only stronger but also more resistant to cracks. The circular perforations are spaced 4 inches apart and each perforation is $\frac{3}{4}$ " in diameter. When plaster is applied over this lath it is forced through these perforations and mushrooms out on the back of the lath, giving 48 of these keys to each sheet of lath.

Being made of gypsum, Beaver Perforated Gypsum Lath will neither burn nor support combustion, and in fact it protects the wood members to which it is applied. It works with the ease of lumber, is applied with nails, and can be sawed or scored along a straight edge and broken. Standard size is 16" x 48", $\frac{3}{8}$ " thick.

Beaver Gypsum Lath

Consists of a gypsum core strongly reinforced on both sides with specially prepared fibre surfacing which makes an ideal base for plaster. The strong, rock-like core of these closed edge lath panels provides exceptional structural value and support.

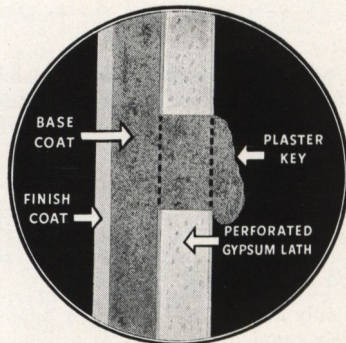
Gypsum lath is highly resistant to moisture. There is practically no shrinkage or expansion of the lath—an important feature since it prevents swelling or buckling and consequent cracking of the plaster. This form of lath is quickly applied, saves time (and the material forced through some forms of lath to provide keys), and does not spoil the set of the plaster by absorbing any quantity of water from it. The panels are light, easy to saw and nail, and readily fitted around openings and into odd shaped corners. Standard sizes are 16" x 32" and 16" x 48", $\frac{3}{8}$ " thick.

Beaver Gypsum Lath with Reflective Insulation

When using Beaver Gypsum Lath as a plaster base, you can provide insulation at trifling additional cost. This gypsum lath is available with an aluminum foil surface. Applied to exterior walls, this lath with its reflective insulation turns back most of the heat, keeping the house cooler in summer and saving fuel by retaining the heat in winter. Thus with no additional cost of application and with only slightly increased material cost, it is possible to provide both a plaster base and insulation. In addition to providing a plaster base and insulation, Beaver Gypsum Lath with Reflective Insulation gives the fire protection and exceptional structural strength of gypsum lath. It comes in $\frac{3}{8}$ " thickness, 16" x 32", or 16" x 48".

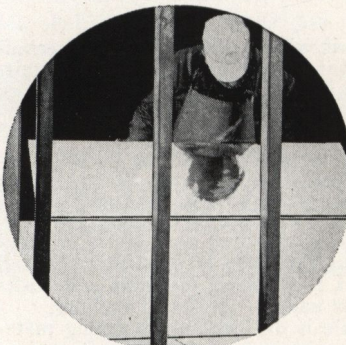
Certain-teed Insulating Key Lap Lath—Cane Fibre

Another insulating plaster base with quality features is Certain-teed Insulating Key Lap Lath. The key lap joint shown at the left gives plasterers what they have long desired—a deep, straight-side, easy-to-fill mechanical key along the horizontal joint. This key provides additional strength where it is needed—at the joints. The lath is a cane fibre product of high insulating value—rot-proof, vermin-proof and termite-proof. The lath can be applied much more quickly than ordinary lath, and in addition to the plaster base afforded gives great structural strength. As a plaster base, Certain-teed Insulating Key Lap Lath offers a smooth surface which gives a beautiful finished job on both walls and ceilings. Size of the sheets is 18" x 48".



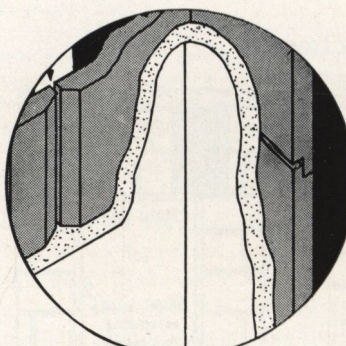
PERFORATED GYPSUM LATH

Plaster is forced through holes and mushrooms out on the back of the lath to provide a mechanical key in addition to the natural bond of the lath and plaster, giving utmost strength.



REFLECTIVE INSULATION

The aluminum foil surface available on Beaver Gypsum Lath provides efficient insulation without additional application cost. Specify Beaver Gypsum Lath with Reflective Insulation.



KEY LAP LATH

Certain-teed Insulating Key Lap Lath serves a dual purpose—as an efficient fibre insulation and as a high grade plaster base at one cost of application.

Certain-teed

KALITE SOUND-ABSORBING PLASTERS



Photograph Showing Surface of Kalite Plaster. Enlarged View Shows Great Porosity of Surface

Three types of Kalite sound-absorbing products are available. Kalite "H" Plaster is a highly cellular sound-absorbing plaster made of carefully graded and sized pumice of a special variety, mixed with calcined gypsum and other necessary ingredients. It is available in either natural gray or buff. If Kalite sound-absorbing plasters are to be decorated, consult the nearest Sales Office of CERTAIN-TEED PRODUCTS CORPORATION for recommendations.

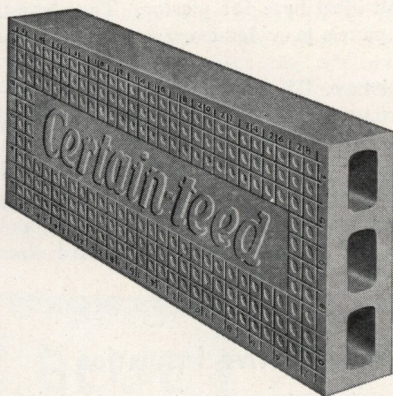
Kalite Hydraulic Plaster is made of a pumice aggregate with Portland Cement binder, suitable for sound correction purposes where physical conditions require damp-proof construction, such as the walls and ceilings of steam kitchens, swimming pools, etc.

Kalite Cast is a quality material for plain and ornamental casting purposes. It combines high sound-absorbing properties with structural strength, sharp outline of arrises, decorative detail in the finished casting, and a pleasing texture and appearance. Available in five colors—natural white, sandstone, limestone, light buff, and medium buff.

On the job Kalite is mixed with water only and is then ready for application. Kalite mortar weighs approximately one-half as much as ordinary sanded gypsum plaster mortar, and furnishes a smooth or textured hard finish under the trowel.

For a full discussion of sound control, see Certain-teed Fiber Insulation Catalog in Sweet's.

Certain-teed GYPSUM PARTITION TILE



For Fire-proof, Non-load-bearing Construction Certain-teed Gypsum Partition Tile Offers Many Advantages

Certain-teed Gypsum Partition Tile is widely used and highly recommended for non-load-bearing fire-proof partitions and furring, stairway and elevator enclosures, walls in hotels, hospitals, office buildings, stores, and warehouses. It is also suitable for beam and column covering, pipe chases and ventilation ducts.

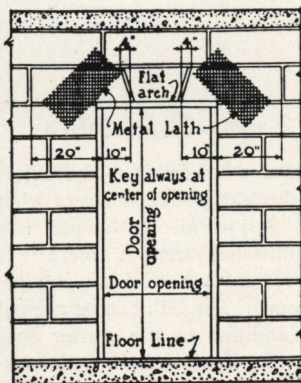
Certain-teed Gypsum Partition Tile, being very light in weight, permits worth-while savings in dead load. Each unit is 30 x 12 in.—2½ sq. ft. in area—requiring less mortar in setting. Uniformly even surfaces require a minimum of plaster. Certain-teed Gypsum Partition Tile is easily sawed to fit corners, pipe chases and conduits with practically no wastage. Alterations are quickly made in finished walls and much of the material can be salvaged for re-use. Grounds and bucks are readily attached by nailing with 10d nails or approved anchors.

Like other gypsum products, this tile is an ideal fire-proofing material, not only because it does not burn itself but also because it does not transmit heat. In composition it consists of set gypsum plaster reinforced with a small amount of fibre.

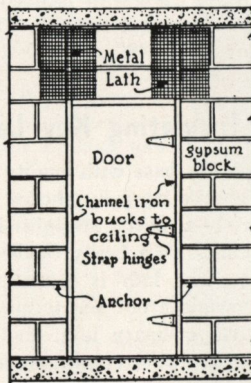
Standard Sizes

Length—30 in.
Width—12 in.
Thickness—Hollow Tile—3 in., 4 in. and 6 in.
—Solid Tile—2 in. and 3 in.

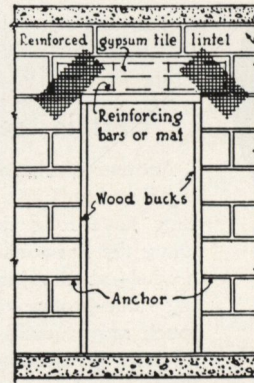
Details of Gypsum Partition Tile Construction



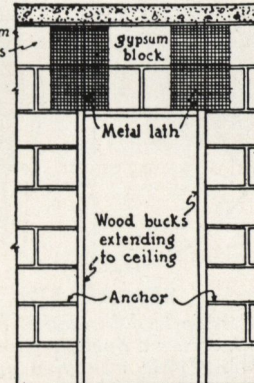
DETAIL SHOWING JACK ARCH CONSTRUCTION



DETAIL OF DOOR WITH CHANNEL IRON FRAME



DETAIL SHOWING REINFORCED GYPSUM LINTEL CONSTRUCTION



DETAIL SHOWING WOOD BUCKS

GYPSUM PRODUCTS MANUAL

BASIC SPECIFICATIONS—LATHING AND PLASTERING

Notes: This specification is arranged to cover an installation of plaster on all types of lath and masonry surfaces. After various paragraphs will be found interpolated notes—which offer information and suggestions. Notes included in () refer directly to preceding paragraphs.

Alternate specifications are suggested and will be found in small type in () inserted after the proper clauses or section of the main specification paragraphs.

Note for Specification Writer: When writing a specification for a project at hand, it is only necessary to use the paragraphs that cover the type of construction contemplated. It may be necessary to slightly revise certain paragraphs to fit the individual requirements.

1—GENERAL

(a) The General Conditions of this specification are hereby made to constitute a part of the specification for Lathing and Plastering.

(See General Notes at end of specifications, Pars. (e), (f) and (g).)

(b) The contractor for plastering shall furnish all materials, labor and scaffolding necessary to completely finish the building in accordance with the intent of the drawings and of the specifications.

(c) The contractor for plastering shall examine all walls, furring, partitions, ceilings, etc., and see that they are in every case secure, true, and plumb or level. He shall report any which are not so to the General Contractor for correction before proceeding to apply any lath, or plaster. Failure to so report shall be taken as assumption of full responsibility for satisfactory conditions by the plastering contractor.

(For frame buildings all exterior and interior studding, all furring joists, rafters, collar beams, etc., will, of course, be specified under Carpentry where it is assumed they will be required to be placed properly and on the centers mentioned under General Notes paragraph (d)—namely: 16 in. for joists and studs and 24 in. for rafters and collar beams.)

2—EXTENT OF WORK AND EXCEPTIONS

(a) Unless otherwise specified and indicated on the drawings, the entire interior of the building shall be lathed and plastered or plastered on masonry, as hereafter specified.

(If any plastering is to be included in an outbuilding or elsewhere, it should be mentioned in Par. (a) unless to be separately contracted for.)

The drawing should distinguish between furred and unfurred masonry and the specifications for Masonry, Carpentry, etc., should likewise provide for the furring or studding out where installed. See General Notes Par. (c). If there are no masonry walls to be plastered, strike out reference in Par. (a).

(b) The plastering shall be the best three-coat work on all lath and two-coat elsewhere. The scratch and brown coats shall be carried down to the rough floor back of all bases, etc., and extended up on all walls of skylights, light wells, etc., unless otherwise provided under Exceptions. On ceilings or other surfaces where there are no grounds, the thickness of the lath and plaster shall equal the full thickness of the grounds specified for that lathing material.

(c) The wall surface in back of all tile wainscoting for walls shall be plastered with a scratch coat of cement mortar, consisting of 1 part Portland cement and 3 parts sand.

(In certain localities jurisdiction has allotted the scratch coat to the tile setters, in which case Par. (c) should be omitted. In this connection the "Basic Specification for Tilework" of the Associated Tile Manufacturers will be found very useful—2nd Edition 1924.)

(d) **EXCEPTIONS**—The only places not to be plastered are (list here locations) and all other spaces marked "not plastered" on the drawings (or, listed in schedule on drawings). No plastering will be required back of (list here such items as, marble, tile and brick wainscoting, etc.).

(In locations where the scratch coat is back of tile wainscoting or wall is conceded to the plasterers, the reference to tile in the list of Exceptions should be omitted.)

3—FURRING

Notes: For frame buildings the wood furring or wood suspended ceilings, to receive lath and plaster, should be included in the Specification for Carpenter Work.

For metal furring or metal suspended ceilings, see Standard Specifications issued by Associated Metal Lath Manufacturers, Inc., which cover all types of metal supports, furring, arches, beams, cornices and suspended ceiling construction. When the desired type of construction has been selected, the paragraphs should be inserted in this section of the Specification—III Furring.

Masonry furring consisting of various types of hollow fire-proof blocks or tiles, etc., is of course, included in the specification for Mason Work.

4—LATHING AND PREPARATION OF SURFACES

GYPSUM LATH—

NOTE: One-Hour Fire Rating—Where this protection is desired, substitute the words "Beaver Perforated Gypsum Lath" for "Beaver Gypsum Lath."

For Insulating Lath—Where insulation in addition to the protection of Gypsum Lath is desired, substitute the words "Beaver Insulating Gypsum Lath Reflective Insulation" for "Beaver Gypsum Lath."

For Fiber Insulation Lath—Where a fiber insulation lath is desired, substitute in the specification the words "Certain-teed Insulating Key Lap Lath" for "Beaver Gypsum Lath."

GYPSUM LATH ("PLASTER BOARD")—(a) Lath with Gypsum Lath (Plaster Board) all studs, joists, etc., and all furred masonry throughout all portions of the building specified to be plastered.

(b) All Gypsum Lath shall be Beaver Gypsum lath, $\frac{3}{8}$ (or $\frac{1}{2}$) in. thick. Nailing edges shall have bearing not less than $\frac{5}{8}$ in. on studs, joists, etc., with horizontal joints in walls and joints at right angles with ceiling joists broken at each board and with vertical joints on opposite sides of partitions not on the same studs. Lath shall be nailed at every support with nails spaced 4 in. apart. For $\frac{3}{8}$ in. lath use $1\frac{1}{2}$ in., 13 gauge, $\frac{3}{8}$ in. head nails. For $\frac{1}{2}$ in. lath use 4d common nails.

(c) Wherever any gypsum lathed walls, partitions or ceilings abut unfurred masonry, secure strips of painted expanded metal lath extending at least 8 in. on to gypsum lath and 8 in. on to masonry. Strips shall be cut from lath weighing not less than 2.5 lbs. per sq. yd.

(d) All grounds for gypsum lath shall be set so as to provide $\frac{1}{2}$ in. of plaster over the lath and will be furnished and installed as specified under Carpentry.

(Provisions for the furnishing and setting of all grounds should be made under Carpenter's Work.)

Certain-teed

GYPSUM PRODUCTS MANUAL

BASIC SPECIFICATIONS—LATHING AND PLASTERING

5—CORNERS, ANGLES, ETC.

(a) Furnish and securely set at all external or projecting angles a stiff galvanized metal corner bead which is to run from top of base to ceilings, heads or beams, or to spring-lines in the case of any arches.

(If the Architect's experience warrants a preference for any particular corner bead, its name can be inserted. If it is desired to have chamfered or rounded corners, strike out reference to corner beads and insert a new paragraph accordingly—and add the "cornerite" of metal lath mentioned in the following paragraph (b).)

(b) In all vertical internal or re-entrant angles and in all angles between ceilings, soffits, and walls, partitions or furring, lightly attach, over the wood lath, "cornerites" made from strips of painted expanded metal lath cut 12 in. wide from sheets weighing not less than 2.2 lbs. per sq. yd. and bent into the shape of an "L" 6 in. on each side. "Cornerites" shall be fastened along each edge but shall not be fastened in the corner. All these angles shall be plastered square and straight along each edge but shall not be fastened in the corner.

(This reinforcement of angles by metal lath "cornerite" will tend to prevent or reduce cracks in the angles. When gypsum lath is specified, change the words "wood lath" to "gypsum lath." When metal lath is specified, this paragraph should be stricken out.)

6—METAL BASE SCREEDS OR GROUNDS, PICTURE MOULDS, ETC.

Notes: Special metal, base screeds, grounds, moulds, coves; complete metal bases with or without electric wire-ways; metal picture moulds, chair rails, door and window trim, etc. Where such items are desired they should be included in the proper trade specification as required by local trade jurisdictions.

Where the installation of any or all of the above will cause special conditions or requirements in the plastering or lathing work, suitable paragraphs should be inserted in this section of the specification under a suitable heading.

7—MATERIALS AND MIXING

PLASTER—(a) All plasters shall be Certain-teed Brands:

Base Coat Plasters—Certain-teed, Beaver, Acme, Agatite.

Prepared Finishes—Certain-teed, Beaver.

Gauging Plasters, White—Satin Spar, Acme, Blue Rapids.

Gauging Plasters, Common—Certain-teed, Beaver, ... as manufactured by the Certain-teed Products Corporation, or other plaster if approved in writing by the Architect.

(If other than the types of Certain-teed brands of plaster on which this specification is based are to be used, modify Par. (a) accordingly.)

SAND—(b) All sand for base coats shall be clean and sharp, free from alkali, salt or quicksand and from objectionable amounts of loam or clay and shall be graded from fine to coarse, and when dry, all shall pass a No. 4 sieve, not more than 10% by weight shall be retained on a No. 8 sieve; not less than 70% by weight shall be retained on a No. 50 sieve, and not more than 5% by weight shall pass a No. 100 sieve. These sieves shall meet the specifications given in the Bureau of Standards' Standard Screen Scale. (See American Society for Testing Materials Specifications for Gypsum Plastering Sand, Serial Designation C35.)

(If any sand float finish is to be included (see Finishing Coat, Pars. 8 (b5) and (b5a)), the sand for this coat should be specified in paragraph above.)

MIXING—(c) All plaster shall be mixed with clean water in clean, tight boxes and in accordance with best local practice, the intent of these specifications, and the directions of maker on file in office of the Architect.

(Mixing and the importance of clean water and directions of the market is of vital importance to good work.)

8—PROPORTIONS AND APPLICATION

The specification below is for plaster of the regular thickness of the grounds applied in three coats.

In some parts of the country and under certain conditions, plaster is applied to the thickness of the grounds in two coats. Provision is therefore made at the end of this Section 8 for such plastering under the heading "Two-coat Work."

THREE-COAT WORK

ON GYPSUM LATH—(a) **First or Scratch Coat**—Shall be one part fibered plaster, to not more than two parts, by weight, of dry sand.

(b) The lath shall not be wetted before plaster is applied. First coat shall be thoroughly applied and the plaster worked well into the joints and the surface shall be scratched or scored to provide a bond for the second coat.

(c) **Second or Browning Coat**—Shall be one part plaster, fibered or unfibered, to not more than three parts, by weight, of dry sand.

(d) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be straightened, keeping back sufficiently from the grounds to allow for finishing coat and the surface shall be broomed or otherwise roughened to receive the finishing coat.

ON WOOD LATH—(a1)—**First or Scratch Coat**—(Same as Par. (a) above for Gypsum Lath.)

(b1) Wood lath shall be thoroughly wetted 12 to 24 hours before plastering is started. First coat shall be applied with sufficient pressure to fill all spaces between lath and obtain good key, leaving a light coat over the lath, and the surface shall be scratched or scored to provide a bond for the second coat.

(c1) **Second or Browning Coat**—(Same as Par. (c) above.)

(d1) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be applied with strong pressure and straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

ON METAL LATH—(a2) **First or Scratch Coat**—(Same as Par. (a) above for Gypsum Lath.)

(b2) First coat shall be applied with sufficient pressure to fill all meshes and obtain good key, leaving a light coat of plaster over the lath and the surface shall be scratched or scored to provide a bond for the second coat.

(c2) **Second or Browning Coat**—(Same as Par. (c) above for Gypsum Lath.)

(d2) Second coat shall be applied when the first coat is set firm and hard but before it is dry. Second coat shall be applied with strong pressure and straightened, keeping back sufficiently from the grounds to allow for finishing coat and the surface shall be broomed or otherwise roughened to receive the finishing coat.

ON MASONRY—(a3) **Base Coat**—Shall be one part plaster, fibered or unfibered, to not more than three parts, by weight, of dry sand.

(b3) The surface of all unfurred brick, hollow tile or concrete block walls shall be wetted before plastering is begun when necessary to kill excessive suction. The plaster shall be applied to a thickness of 5/8 in. beyond the wall face in two operations. A thin layer shall first be applied with strong pressure to secure a good bond and shall be followed immediately with a second layer which shall be straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(Provision is made in the above specification for plastering on rubble masonry or on poured concrete. The first, it is presumed, will never be done without furring and the latter is covered in the following paragraphs.)

Certain-teed

WOOD LATH AND LATHING—(a1) Lath with wood lath all studs, joists, etc., and all wood furred masonry walls throughout all portions of the building specified to be plastered.

(In cases where any masonry is to be plastered direct or where exterior walls are entirely of frame, paragraph (a1) above or in the specifications for "Gypsum Lath" or "Metal Lath" should be modified accordingly.)

(b1) Wood lath shall be of good merchantable quality, non-staining, and free from loose knots. All lath shall be spaced not less than $\frac{1}{4}$ in. nor more than $\frac{3}{8}$ in. apart and shall be laid at right angles to supports. All ends of lath shall have solid bearing and all lath shall be well nailed to each support with 3d lathing nails. A space of $\frac{1}{4}$ in. shall be left between abutting ends of lath. Joints shall be broken not more than every seven laths. No lath shall be carried through from one room to another.

(In some cases this specification for wood lath may not be considered sufficient and the Architect should revise paragraph (b1) in accordance with the Standard Grading Specifications issued by the Lumber Manufacturers Association functioning in the locality where the work is situated.)

(c1) Over any heat pipes concealed in walls or partitions furnish and install strips of gypsum lath at least $\frac{1}{4}$ in. thick or painted expanded metal lath or wire lath well secured, with good bearing, at nearest supports. Wherever any wood-lathed walls, partitions or ceilings abut unfurred masonry, secure strips of painted expanded metal lath extending at least 8 in. on to wood lath and 8 in. on to masonry. Strips shall be cut from lath weighing not less than 2.5 lbs. per sq. yd.

(In some localities it is customary to specify the lathing-in of heat pipes as a part of the heating contractor's work, in which case provide accordingly and modify this paragraph. When gypsum lath or metal lath is specified, this paragraph should be stricken out.)

(d1) Over the heating plant in basement and extending 3 ft. beyond its outlines, and of smoke pipe to wall, furnish and securely install gypsum $\frac{3}{8}$ in. thick or painted expanded metal lath or galvanized wire lath weighing not less than 3.0 lbs. per sq. yd.

(The Committee on Building Construction of the National Fire Protection Association recommend the protection of wood-work over heating apparatus and over fuel storage (other than anthracite). The above paragraph is suggested as a minimum.)

(e1) (See note following.)

(For other uses of incombustible lath, if any are desired to replace wood lath in special locations, describe in this space.)

(f1) All grounds for wood lath and lathing shall be $\frac{3}{4}$ in. thick and will be furnished and installed as specified under Carpentry. Thickness of grounds includes the thickness of the lath.

(Provisions for the furnishing and setting of all grounds should be made under Carpenter's Work.)

METAL LATH—(a2) Lath with metal lath, all wood studs, joists, etc., back of all tile wainscoting (or walls), and all furred masonry walls (or all steel studs, beams, metal furring, metal suspended ceilings, etc.) throughout all portions of the building specified to be plastered, including all arches, beams, cornices, etc.

(b2) For Walls, Furring and Partitions and Wood (or Steel) Supports Spaced 16 in. or Less on Centers—Painted expanded metal lath weighing not less than 2.5 lbs. per sq. yd. shall be used.

For Ceilings with Wood Joists (or Wood Furring) (or Metal) Spaced 16 in. or Less on Centers—Painted expanded metal lath weighing not less than 3.0 lbs. per sq. yd. shall be used.

For Ceilings with Wood Joists, Rafters or Collar Beams (or Wood Furring) (or Metal Furring) Spaced 24 in. on Centers—Painted expanded metal lath of the rib type weighing not less than 3.5 lbs. per sq. yd. shall be used.

(c2) Metal lath shall be applied with the long dimension of the sheet across the supporters. Sheets shall be lapped at sides not less than $\frac{1}{2}$ in. and at ends not less than 1 in.

(d2) Sheets shall be attached to wood supports by not less than 6d nails or by $1\frac{1}{4}$ in. No. 14 gauge wire staples; either of these shall be driven to a penetration of not less than $\frac{3}{4}$ in. and be spaced not to exceed 6 in.

on centers. Nails shall be driven on a slant, alternating the slant of adjacent nails, and be bent over at least one strand of the lath.

Note: For fireproof building the following paragraph (d2a) should be used instead of paragraph (d2).

(d2a) Sheets shall be wired to all metal supports at intervals not exceeding 6 in., with not less than No. 18 gauge galv. soft annealed wire.

(e2) All horizontal laps of sheets on sidewalls shall be tightly tied at least once between supports, and side laps on ceilings shall be tied twice between supports with No. 18 gauge galvanized soft annealed wire.

End laps shall generally occur only over supports; if between supports, sheets shall be securely laced every 6 in. with wire just described. At internal angles the lath on one wall shall be extended on the adjoining wall not less than 15 in. beyond the corner (to the nearest support).

(f2) Wherever any walls, partitions or ceilings abut unfurred masonry, the metal lath shall be extended at least 6 in. on to the masonry and be well secured at the edges into the joints.

(g2) All grounds for metal lath shall be $\frac{3}{4}$ in. thick and will be furnished and installed as specified under Carpentry.

(Provisions for the furnishing and setting of all grounds should be made under Carpenter's Work.)

OTHER LATHING BACKGROUNDS—Various types of wire meshed materials and wood, with and without paper backgrounds, and other special patented lathing materials are on the market. No attempt is made to provide for these in this specification. When their use is considered, the manufacturer's data should be consulted.

MASONRY SURFACES—Provision should be made under "Mason's Work" for all joints to be rough struck in brick, hollow tile, gypsum, or concrete block walls which are to be plastered direct.

(a3) The surfaces of all unfurred masonry to be plastered shall be brushed clean with a wire brush and shall be free from oil, grease, soot or projecting mortar.

(b3) Any low places shall be filled out and any unevenness of walls shall be straightened with unfibered plaster ahead of the base coat.

(c3) All grounds for brick, hollow tile and concrete block walls shall be $\frac{5}{8}$ in. thick, and $\frac{1}{2}$ in. thick for gypsum partition tile. Grounds will be furnished and installed as specified under Carpentry.

(When any of the masonry mentioned above is not to be used in the building specified, the reference to it may be stricken out.)

ON POURED CONCRETE—

All concrete surfaces which are to be plastered, should be put in condition to receive and retain the plaster coats.

(a4) All concrete surfaces to be plastered shall be treated as follows: Remove with a wire brush all dust and loose particles. Grease, oil or efflorescence shall be washed off with a solution of one part of commercial muriatic acid to four parts of water, and the surface so treated, washed again with clean water.

(b4) Smooth and dense surfaces shall be hacked so as to provide a rough base or background for the plaster. Plastering upon smooth concrete surfaces, which are first covered with so-called waterproof paints or compounds will not be allowed.

(c4) **Base Coat**—Shall be Certain-teed or Beaver Concrete Bond Plaster used neat with only the addition of water. The base coat shall consist of one or more thin coats sufficient to straighten the walls and ceilings and shall be applied with great pressure to secure a good bond. If necessary to apply in two coats, double back with the same material. The plaster shall be not less than $\frac{1}{8}$ in. nor more than $\frac{3}{8}$ in. in thickness, exclusive of the finish coat. The surface of the base coat shall be broomed or otherwise roughened to receive the finishing coat.

(If Bond Plaster is to be used as specified above, revise Par. 7 (a) to include the name of manufacturer and brand.)

Finishing Coat—(a5) Smooth White Finish shall be one measure of Gypsum Gauging Plaster to not more than three measures of perfectly slaked fresh burned plasterers' lump lime putty or standard hydrated finishing lime putty thoroughly and uniformly mixed.

Certain-teed

If it is desired, a prepared gypsum, finishing plaster may be used for the smooth white finishing coat, in which case substitute the following paragraph and revise Par. 7 (a) accordingly.

(a5a) Smooth White Finish shall be Certain-teed or Beaver Prepared Trowel Finish Plaster mixed to the proper consistency with clean water only.

(b5) Finishing coat shall be applied throughout the building except behind base and any place under Exceptions in Par. 2 (d) and shall be smooth white finish troweled to a dense, true surface.

Note: If "Sand Float Finish" is desired in some locations instead of "Smooth White", add one of the following paragraphs after, at end of Par. (b5), noting the exceptions and giving the locations.

(b5a) Sand Float Finish shall be four parts Gypsum Cement Plaster unfibred, one measure of perfectly slaked fresh burned plasterers' lump lime putty or standard finishing hydrated lime, and five measures of clean, sharp sand.

(b5b) Sand Float Finish shall be Certain-teed or Beaver Sand Float Finish Plaster mixed with water only.

(c5) (See note following.)

Note: This specification does not contemplate that colored, textural or special effects will be required as a finish in any portion of this building. If so, insert here the required paragraphs giving the location and description.

(d5) Finishing coat shall be applied when the base coat is set firm and hard and nearly dry. The surface of the base coat shall be sprinkled with water before the finish coat is applied when necessary to kill excessive suction.

(e5) All finishing coats throughout shall be applied and finished in the most workmanlike manner and shall be left plumb or level and true and even planed, free from trowel marks, blotches and without joints showing.

(f5) All finished plastering shall be protected from wind until set. In freezing weather, the contractor shall arrange with the General Contractor that plastering shall be protected from frost until set hard and thoroughly dry.

(In windy, hot, dry weather, openings should be screened but not closed. In all clear weather after plastering has set, doors and windows should be kept open as fully as possible.)

TWO-COAT WORK

For cautionary notes regarding "Two-coat Work" and its undesirability on certain backgrounds, read the following:

Circular No. 151 of the Bureau of Standards entitled "Wall Plaster, Its Ingredients, Preparation and Properties" states in part regarding two-coat work:

"Double-up", "laid-off", or "laid-on" work, as it is variously called in different localities, means the application of the scratch and brown coats together, or at least without permitting the usual time to lapse between them. The scratch coat is applied in the way specified above, but it is not permitted to harden, nor is its surface scratched. The application of the brown coat is started immediately after finishing the application of the scratch coat. This method is obviously cheaper than straight three-coat work, but certain precautions are essential to its successful use. The brown coat must be applied before the hardening of the scratch coat has progressed far enough to produce a glazed surface. The backing must be sufficiently rigid of itself that it will not yield under pressure of the trowel, and it will not sag under the weight of the combined coats. If it deflects to any appreciable extent, the keys which hold the scratch coat to it will probably be broken, and if it sags it will be found extremely difficult to bring the brown coat out to a true plane surface. For these reasons, doubled-up work shall not be applied to metal lath. Its use on wood is not recommended, particularly if the plaster is to be $\frac{3}{8}$ in. thick. On masonry backings the use of doubled-up work is largely a question of application—if the plasterer succeeds in making the plaster stick and is able to form a true plane surface, the work will be satisfactory. This depends on the thickness of the plaster and the nature of the backing. It is difficult to apply a doubled-up coat of a thickness greater than $\frac{3}{8}$ in. The great suction exerted by gypsum tile makes the application of doubled-up work easy; on clay tile it is almost impossible."

ON GYPSUM LATH—

For two-coat work on "Gypsum Lath", specify as follows, substituting the proper paragraphs as noted:

(a6) (Same as Par. 8 (a).)

(b6) The boards shall not be wetted before plaster is applied. Base coat shall be applied in two operations—a thin layer of plaster shall first be spread under pressure over the boards and the plaster worked well into the joints. This shall be immediately followed with a second layer which shall be straightened to a true and even plane, keeping back sufficiently from the grounds to allow for the finishing coat. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(c6) Finishing Coat—(Same as Pars. 8 (a5) to (f5).)

ON WOOD LATH—

If two-coat work on wood lath is desired, specify as follows, substituting the proper paragraphs as noted:

(a7) (Same as Par. 8 (a).)

(b7) Wood lath shall be thoroughly wetted 12 to 24 hours before plastering is started. Base coat shall be applied in two operations—a thin layer of plaster shall first be applied with sufficient pressure to fill all spaces between lath and obtain a good key and shall be followed immediately with a second layer which shall be straightened to a true, even plane. The surface shall be broomed or otherwise roughened to receive the finishing coat.

(c7) Finishing Coat—(Same as Pars. 8 (a5) to (f5).)

ON MASONRY—(a8) For two-coat work on brick, hollow tile or concrete block walls, same as Pars. 8 (a3) and (b3).

(b8) Finishing Coat—(Same as Pars. 8 (a5) to (f5).)

9—ARCHES, BEAMS, CORNICES, MOLDINGS, ETC.

(a) Wherever any arches, beam effects, corbels, etc., are indicated on the drawings, the same shall be fully formed with plaster in strict accordance with detailed drawings. All to have sharp arrises.

(If no arches, beams, etc., are to be included, they will of course, be specified to be built or formed by the Carpenter for wood frame construction. If not, they should be built of metal lath and fully described in Par. 4 (a2). If more ornamental features are intended, amplify. If not to have sharp arrises, change to chamfering or rounding.)

(b) Wherever any cornices, moldings or other ornamental plastering features are shown or indicated on the drawings, they shall be run straight and true, as detailed, with Sunflower or Acme Molding Plaster, or may be pre-cast, securely set and anchored without joints showing. All moldings and lines shall make true intersections and be neatly mitered at angles. The girths of cornices and sizes of molds shall be as follows:

(Here allocate and describe.)

(If no cornices, moldings, etc., are to be included, strike out this section in specification. If to be included, and if large enough in girth or size to require forms, mention the same for cornices, beams, etc., in Carpenter's Work or Metal Furring and Lather's Work.)

10—BLANK HEADING

(This space is suggested so that the Architect may include provisions for plastering of window jambs, or reveals where not of wood, any special plastering or finishing in toilet rooms, bathrooms, kitchens or laundries, etc., the plastering of any out-building, any "water-proofing," etc., and clauses regarding guarantee or conduct of work or such other special items as may apply to the particular structure in hand which are not provided for under other headings.)

11—PATCHING AND COMPLETION

(a) The contractor for plastering shall at all times keep the premises clean of loose mortar and rubbish resulting from his work and shall neatly patch or otherwise make good any damaged plaster after the various trades have left the building.

(It has been found in practice and as a matter of justice that both patching and waste can be avoided if provision is made for the plastering contractor to be paid for patching by the trade causing the damage. This paragraph can be amplified as desired by the Architect to conform to his experience or trade custom of the locality.)

(b) The whole of the work shall be completed to the satisfaction of the Architect and all shall be left perfectly straight, true and level or plumb, free from waves, cracks, blisters and defects of any kind, or be replaced until it is.

12—STUCCO

(If any exterior plastering is to be done, here enumerate and describe.)

(For exterior plastering, or Stucco, the Specification for Lime Stucco of the National Lime Association and for Cement Stucco of the Portland Cement Association will be found very useful.)

GYPSUM PRODUCTS MANUAL

GYPSUM WALLBOARD AND SHEATHING (Special Types)

Bestwall Gypsum Wallboard

Bestwall Gypsum Wallboard comes in smooth, solid sheets of special gypsum mix molded between sheets of long fibered, heavy paper. It is a closed-edge board which comes in $\frac{1}{4}$ in., $\frac{3}{8}$ in., and $\frac{1}{2}$ in. thicknesses, 32 in., 36 in., or 48 in. in width, and 4 ft. to 12 ft. in length.

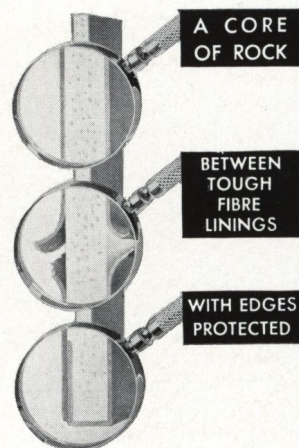
Bestwall, the Original Gypsum Wallboard, is useful for walls, ceilings, and partitions in new construction, remodeling, or repairing. It may be sawed and nailed like lumber and may be nailed to studs and joists or over old or new construction. It will not warp or buckle and is vermin-proof, resistant to moisture and climatic changes. When desired, attractive paneling may be applied, the wood strips being placed so as to cover the joints.

Recessed Edge—Bestwall Gypsum Wallboard is available with a recessed edge which permits construction of smooth walls without noticeable joints. The invisible joints are obtained through the use of Bestwall Joint System.

Fire-Resistant—Bestwall Gypsum Wall Board is highly resistant to fire. In tests it has withstood for 15 minutes the heat of a Meeker Burner (1200° to 1500° F.) applied to one face, with only slight damage to the opposite surface.

Exclusive Advantages—Bestwall Gypsum Board has two exclusive features—Nail-Marking and a method of packing which assures the delivery of sheets with a clean face. Nail-Marking saves at least 10% of the application time by eliminating the need for measuring and ruling to indicate where to nail to hit studs. A row of inconspicuous dots shows the workman where to find studs on either 16 in. or 24 in. centers.

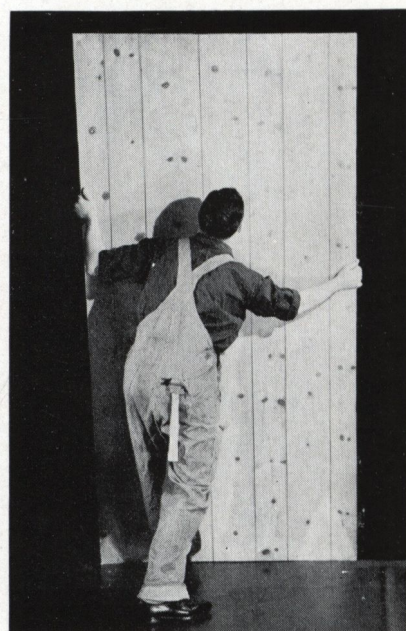
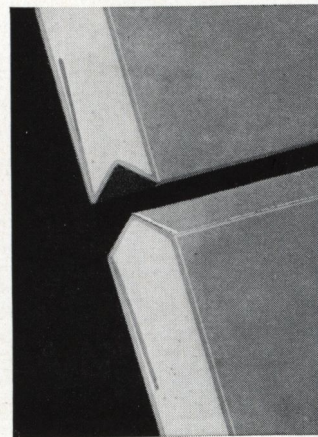
The two outer dotted lines are spaced to indicate the stud center on 16 in. spacing. The center line spots the spacing when the studs are 24 in. on center. The dots are spaced $3\frac{1}{2}$ in. apart. In nailing on side walls, space nails 3 dots apart or $10\frac{1}{2}$ in. and on ceilings 2 dots apart or 7 in. The dots are heavy enough to be seen but do not mar the board in any way.



Beaver Gypsum Sheathing

This is an ideal material for exterior sheathing on frame buildings under siding or clapboards, shingles, brick veneer or stucco. It is applied with the length of the sheathing at right angles to the studs.

It is $\frac{1}{2}$ in. thick with a solid fire-proof core of gypsum encased in a tough, water-resistant fiber covering. The long edges are V-tongued and grooved which stiffens the unsupported edges when installed. The joints do not open up as gypsum sheathing does not shrink or expand. This gypsum sheathing has given ample proof of its structural bracing strength in comparison with diagonal wood sheathing.



Bestwall* Grain Board—Knotty Pine Finish—American Walnut Finish

Bestwall Grain Board is useful in homes for the construction of play-rooms, libraries, bars, etc., as well as in offices, in store windows, and store displays. It makes possible in a fire-proof material, effects like those of wood panelling. It is useful for remodeling work as well as for new construction.

The core of Bestwall Grain Board is carefully selected gypsum rock—the same used for Bestwall Gypsum Wallboard. This gives Bestwall Grain Board the advantage of strength and fire-protection as well as freedom from warping or shrinking.

Bestwall Grain Board comes in sheets of $\frac{3}{8}$ in. thickness, 48 in. wide, and 8 ft., 9 ft. and 10 ft. long. It comes in two finishes, Knotty Pine and American Walnut, each of which affords an accurate reproduction of the genuine wood grain. The Knotty Pine finish is the type illustrated at the left.

Metallized Bestwall* Gypsum Board (Reflective Insulation)

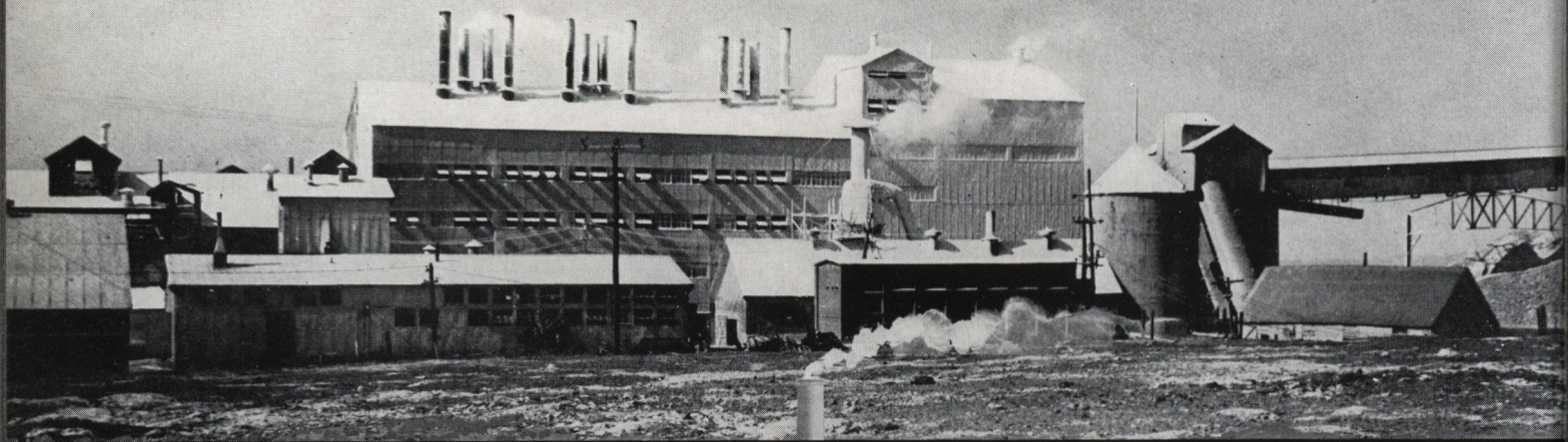
Metallized Bestwall Gypsum Board comes in sheets of $\frac{3}{8}$ in. thickness, 48 in. wide and 4 ft. to 12 ft. long. Its metal foil surface gives it all the special advantages of reflective insulation, with the strength and fire-protection of all Bestwall Gypsum Boards.

This Metallized Gypsum Board is useful in many places in the home, both in new construction and in remodeling. It contributes to the comfort as well as the fire-protection of any structure in which it is used. It helps to keep rooms cooler in summer and warmer in winter, and its insulating value aids materially in the reduction of expenditures for fuel.

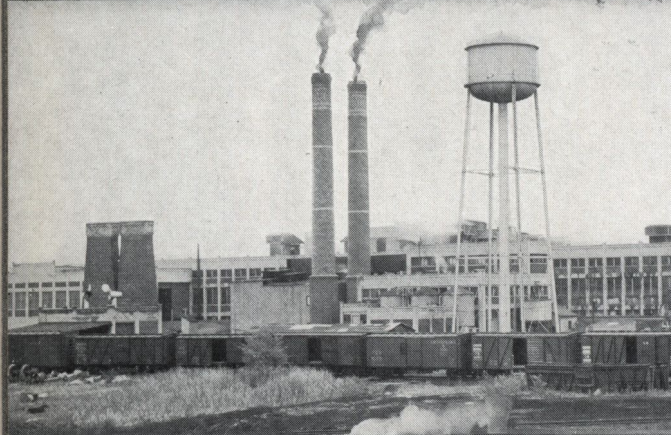
The core of Bestwall Gypsum Board (Reflective Insulation) is carefully selected gypsum rock—the same used in other Bestwall Gypsum Boards.

*Trade Mark.

Certain - teed



THERE'S A CERTAIN-TEED PLANT NEAR YOU



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